

**OCCUPATIONAL SAFETY
AND HEALTH STANDARDS BOARD**

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NOTICE OF PROPOSED MODIFICATION TO
CALIFORNIA CODE OF REGULATIONS

TITLE 8: Chapter 4, Subchapter 7, Article 15, Section 3482, and
Article 109, Sections 5161 and 5178
of the General Industry Safety Orders

Grain Handling Facilities

Pursuant to Government Code Section 11346.8(c), the Occupational Safety and Health Standards Board (Standards Board) gives notice of the opportunity to submit written comments on the above-named standards in which modifications are being considered as a result of public comments and/or Board staff consideration.

On April 20, 2006, the Standards Board held a Public Hearing to consider revisions to Title 8, Sections 3482, 5161, and 5178 of the General Industry Safety Orders. The Standards Board received written comments on the proposed revisions. The standards have been modified as a result of these comments and Board consideration.

A copy of the full text of the standards as originally proposed, and a copy of the pages with the modifications clearly indicated, are attached for your information. In addition, a summary of all written comments regarding the original proposal and staff responses is included.

Any written comments on these modifications must be received by 5:00 p.m. on October 2, 2006, at the Occupational Safety and Health Standards Board, 2520 Venture Oaks Way, Suite 350, Sacramento, California 95833. The standards will be scheduled for adoption at a future business meeting of the Standards Board.

The Standards Board's rulemaking files on the proposed action are open to public inspection Monday through Friday, from 8:00 a.m. to 4:30 p.m., at the Standards Board's office at 2520 Venture Oaks Way, Suite 350, Sacramento, California 95833.

Inquiries concerning the proposed changes may be directed to Keith Umemoto, Executive Officer at (916) 274-5721.

OCCUPATIONAL SAFETY AND HEALTH
STANDARDS BOARD

Date: September 11, 2006

Keith Umemoto, Executive Officer

STANDARDS AS ORIGINALLY PROPOSED

**STANDARDS PRESENTATION
TO
CALIFORNIA OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD**

PROPOSED STATE STANDARD,
TITLE 8, CHAPTER 4

Amend section 3482 as follows:

§ 3482. Bulk Storage of Loose Material.

(a) No employees shall be permitted to work on or over loose material, or attend an employee working on or over loose material, until they have been instructed in the hazards involved and the precautions that must be taken to prevent employees from being caught in caved-in material.

NOTE: Work in grain handling facilities shall be in accordance with the provisions of section 5178, Grain Handling Facilities.

(c)(1) No employee shall be required or permitted to stand, climb, or walk upon piles of sand, sawdust, chips, gravel, fuel, seed, ~~grain~~ or similar granular or loose materials within bins, bunkers, hoppers, silos or other structures, unless a boatswain's chair or a Class III body harness with a line suspended from the hoist is used.

(e) No employee shall be required or permitted to work or climb on piled, granular or free flowing (loose) material, such as but not limited to sand, sawdust, chips, gravel, fuel, or seed ~~or grain~~ piled on a level deck or on the ground, unless provision is made for safe access to and egress from the piled material and protection from engulfment/entrapment hazards is provided as described in Section 3482(b). Whenever possible, platforms or walkways shall be provided and employees shall be instructed to remain upon such platforms or walkways while working over loose material.

NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code; and Section 18943(b), Health and Safety Code.

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**PROPOSED STATE STANDARD,
TITLE 8, CHAPTER 4**

Amend section 5161 as follows:

§ 5161. Definitions.

Flat storage structure. A grain storage building or structure, that is not a confined space as defined by GISO section 5158, that will not empty completely by gravity, and that has an unrestricted ground level opening to permit entry to reclaim grain using powered equipment or manual means. Flat storage structures include flat bottom buildings where grain is stored on the floor or other structures where grain is stored in a pile in bulk on a flat bottom surface.

NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

Amend section 5178 as follows:

§ 5178. Grain Handling Facilities.

(a) Scope:

(1) This section ~~and section 5158~~ applies to all grain handling facilities, including grain elevators, flat outdoor storage and flat storage structures, feed mills, flour mills, rice mills, dust pelletizing plants, dry corn mills, soybean flaking operations, and the dry grinding operations of soycake.

(2) For the purposes of this section, the term "grain" includes raw and processed grain, grain products, and cottonseed.

(3) This section contains requirements for the control of grain dust fires and explosions, and certain other safety hazards associated with grain handling facilities.

(4) ~~EXCEPTION:~~ This section does not apply to seed plants which handle and prepare seeds for planting and on farm or feedlot facilities.

(b) Entry into grain storage structures.

(1) ~~(a)~~ The employer shall either issue written authorization for entering bins, silos, ~~or~~ tanks or other confined spaces, or provide a qualified supervisor during the entire operation.

(A) The written authorization shall certify that the precautions contained in section 5158 have been implemented prior to employees entering confined spaces. The written authorization shall be maintained on file for inspection by the Division.

(2) ~~(b)~~ Prior to the entry of a confined space, the atmosphere ~~within a bin, silo or tank~~ shall be tested. If the oxygen content is less than 19.5 percent (%), or if combustible gas or vapor is detected in excess of 10% of the lower explosive limit, or if dangerous air contamination due to the toxicity of a substance is detected in excess of the limits prescribed by section 5158(b)(2)C, the requirements prescribed by section 5158 shall apply.

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(3) Prior to entering, all mechanical, electrical, hydraulic, and pneumatic equipment which presents a danger to employees inside grain storage structures shall be deenergized and shall be disconnected, locked-out, tagged-out, blocked-out, or otherwise prevented from operating by other equally effective means or methods as prescribed by GISO section 3314.

(4) "Walking down grain" and similar practices where an employee walks on grain to make it flow within or out from a grain storage structure, or where an employee is on moving grain, are prohibited.

(5) ~~(4)~~ Employees shall not be permitted to be either enter bins, silos, or tanks underneath a bridging condition, or in any other location where an accumulation a buildup of grain or grain products on the sides or elsewhere could fall and engulf the employee-bury them.

(6) The employer shall equip the employee with a Class III body harness with lifeline, or a boatswain's chair, and a second employee shall be present when an employee enters a grain storage structure from a level at or above the level of the stored grain or grain products, or when an employee walks or stands on or in stored grain of a depth which poses an engulfment hazard.

(A) The lifeline shall be so positioned, and of sufficient length, to prevent the employee from sinking further than waist-deep in the grain.

EXCEPTIONS for subsection (b)(6):

1. Where the employer can demonstrate that the protection required by this subsection is not feasible or creates a greater hazard, the employer shall provide an alternative means of protection which is demonstrated to prevent the employee from sinking further than waist-deep in the grain.

2. When the employee is standing or walking on a surface which the employer demonstrates is free from engulfment hazards, the lifeline or alternative means may be disconnected or removed.

(7) The employer shall provide necessary equipment and qualified personnel for rescue operations.

(c) Hot work.

(1) The employer shall issue a permit for all hot work, with the following exceptions:

(A) In welding shops authorized by the employer;

(B) In hot work areas authorized by the employer which are located outside of the grain handling structure.

(2) The permit shall certify that the requirements contained in section 4848 have been implemented prior to beginning the hot work operations. The permit shall be kept on file until completion of the hot work operations.

(d) Housekeeping. The employer shall develop and implement a written housekeeping program that establishes the frequency and method(s) determined best to reduce accumulations of fugitive grain dust on ledges, floors, equipment, and other exposed surfaces.

(1) ~~(e)~~ The housekeeping program for grain elevators shall address fugitive grain dust accumulations at priority housekeeping areas.

(2) ~~(4)~~ Priority housekeeping areas shall include at least the following:

(A) Floor areas within 35 feet of inside bucket elevators;

(B) Floors of enclosed areas containing grinding equipment; and

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(C) Floors of enclosed areas containing grain dryers located inside the facility.

(3) ~~(2)~~ The employer shall immediately remove any grain dust accumulations whenever they exceed 1/8 inch (.32cm) at priority housekeeping areas.

EXCEPTION: Grain and product spills shall not be considered fugitive grain dust accumulations. However, the housekeeping program shall address the procedures for removing such spills from the work area.

(4) The use of compressed air to blow dust from ledges, walls, and other areas shall only be permitted when all machinery that presents an ignition source in the area is shut-down, and all other known potential ignition sources in the area are removed or controlled.

Grate openings. Receiving-pit feed openings, such as truck or railcar receiving-pits, shall be covered by grates. The width of openings in the grates shall be a maximum of 2-½ inches (6.35 cm).

(f) Filter collectors.

(1) ~~(4)~~ Fabric dust filter collectors which are a part of a pneumatic dust collection system shall be equipped with ~~the~~ a monitoring device that will indicate a pressure drop across the surface of the filter.

(2) Filter collectors installed after [*the effective date of this standard*] shall be located:

(A) Outside the facility; or

(B) In an area inside the facility protected by an explosion suppression system; or

(C) In an area inside the facility that is separated from other areas of the facility by construction having at least a one hour fire-resistance rating, and which is adjacent to an exterior wall and vented to the outside. The vent and ductwork shall be designed to resist rupture due to deflagration.

(g) Preventive maintenance.

(1) The employer shall implement preventive maintenance procedures consisting of:

(A) Regularly scheduled inspections of at least the mechanical and safety control equipment associated with dryers, grain stream processing equipment, dust collection equipment including filter collectors, and bucket elevators;

(B) Lubrication and other appropriate maintenance in accordance with manufacturers' recommendations, or as determined necessary by prior operating records.

(2) The employer shall promptly correct dust collection systems which are malfunctioning or which are operating below designed efficiency. Additionally, the employer shall promptly correct, or remove from service, overheated bearings and slipping or misaligned belts associated with inside bucket elevators.

(3) The employer shall implement procedures in accordance with the provisions of GISO section 3314 for the use of tags and locks which will prevent the inadvertent application of energy or motion to equipment being repaired, serviced, or adjusted, which could result in employee injury.

(h) Grain stream processing equipment.

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Grain stream processing equipment (such as hammer mills, grinders, and pulverizers) shall be equipped with an effective means of removing ferrous material from the incoming grain stream.

(i) Continuous-flow bulk grain dryers.

(1) ~~(e)~~ By April 1, 1991, all All direct-heat grain dryers shall be equipped with the following automatic controls that will:

(A) ~~(1)~~ sShut-off the fuel supply in case of power or flame failure or interruption of air movement through the exhaust fan; and

(B) ~~(2)~~ sStop the grain from being fed into the dryer if excessive temperature occurs in the exhaust of the drying section.

(2) ~~(f)~~ Direct-heat grain dryers installed after July 5, 1990—the effective date of these regulations, shall be located in one of the following areas:

(A) ~~(1)~~ eOutside the grain elevator; or

(B) ~~(2)~~ iInside the grain elevator protected by a fire or explosion suppression system; or

(C) ~~(3)~~ iInside the grain elevator separated from other areas of the facility by construction having at least a one hour fire-resistance rating.

(j) ~~(g)~~ Inside bucket elevators (bucket elevators).

(1) Bucket elevators shall not be jogged to free a choked leg.

(2) All belts and lagging purchased after July 5, 1990, the effective date of these regulations shall be conductive. Such belts shall have a surface electrical resistance not to exceed 300 megohms.

(3) ~~By April 1, 1991, all All~~ bucket elevators shall be equipped with a means of access to the head pulley section to allow inspection of the head pulley, lagging, belt, and discharge throat of the elevator head. The boot section shall also be provided with a means of access for clean-out of the boot and for inspection of the boot, pulley, and belt.

(4) ~~By April 1, 1991, the employer shall~~ Bearings:

(A) ~~mount b~~ Bearings shall be mounted externally to the leg casing; or

(B) ~~provide v~~ Vibration monitoring, temperature monitoring or other means shall be provided to monitor the condition of bearings mounted inside or partially-inside the leg casing.

(5) ~~By April 1, 1991, the employer shall equip b~~ Bucket elevators shall be equipped with a motion detection device which will shut-down the bucket elevator when the belt speed is reduced by 20% of the normal operating speed.

(6) ~~By April 1, 1991, the employer shall~~ Belt alignment:

(A) ~~equip b~~ Bucket elevators shall be equipped with a belt alignment monitoring device which will initiate an alarm to employees when the belt is not tracking properly; or

(B) ~~provide a~~ A means shall be provided to keep the belt tracking properly, such as a system that provides constant alignment adjustment of belts.

(7) Subsections ~~(g)~~(j)(5) and (j)(6) of this section do not apply to grain elevators having permanent storage capacity of less than one million bushels, provided that daily visual inspection is made of bucket movement and tracking of the belt.

(8) Subsections ~~(g)~~(j)(4), (j)(5), and (j)(6) do not apply to the following:

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- (A) ~~h~~Bucket elevators which are equipped with an operational fire and explosion suppression system capable of protecting at least the head and boot section of the bucket elevator; or
(B) ~~h~~Bucket elevators which are equipped with pneumatic or other dust control systems or methods that keep the dust concentration inside the bucket elevator at least 25% below the lower explosive limit at all times during operations.

~~(h) Employees shall not enter bins, silos, or tanks underneath a bridging condition, or where a buildup of grain products on the sides could fall and bury them.~~

~~(k)~~ (i) Record keeping.

A certification record shall be maintained of each inspection performed in accordance with sections 3221(e), ~~and~~ 3328(b), and 5178(g) containing the date of the inspection, the name of the person who performed the inspection and identification of the equipment inspected.

(l) Contractors.

(1) The employer shall inform contractors performing work at the grain handling facility of known potential fire and explosion hazards related to the contractor's work and work area. The employer shall also inform contractors of the applicable safety rules of the facility.

(2) The employer shall explain the applicable provisions of the emergency action plan to contractors.

(m) Emergency escape.

(1) The employer shall provide at least two means of emergency escape from galleries (bin decks).

(2) The employer shall provide at least one means of emergency escape in tunnels of existing grain elevators.

(3) Tunnels in grain elevators constructed after [*the effective date of this standard*] shall be provided with at least two means of emergency escape.

(n) Training. In addition to the requirements of section 3203, employees shall be trained prior to starting work in a grain handling facility and annually thereafter in at least the following:

(1) General safety precautions associated with the facility, including recognition and preventive measures for the hazards related to dust accumulations and common ignition sources such as smoking; and,

(2) Specific procedures and safety practices applicable to their job tasks. Employees assigned special tasks, such as but not limited to, cleaning procedures for grinding equipment, clearing procedures for choked legs, housekeeping procedures, hot work procedures, preventive maintenance procedures, lockout/tagout procedures, confined space entry, and handling of flammable or toxic substances, shall be provided training to perform these tasks safely.

(3) Training for employees who enter grain storage structures or work on grain storage piles shall include instruction in the recognition of engulfment and mechanical hazards and how to avoid them.

(o) Emergency action plan. The employer shall develop and implement an emergency action plan in accordance with section 3220 of these Orders.

NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

PROPOSED MODIFICATIONS
(Modifications are indicated in bold,
double underline wording for new language,
and bold, strikeout for deleted language.)

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**PROPOSED STATE STANDARD,
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Amend section 3482 as follows:

§ 3482. Bulk Storage of Loose Material.

(a) No employees shall be permitted to work on or over loose material, or attend an employee working on or over loose material, until they have been instructed in the hazards involved and the precautions that must be taken to prevent employees from being caught in caved-in material.

NOTE: Work in grain handling facilities shall be in accordance with the provisions of section 5178, Grain Handling Facilities.

(c)(1) No employee shall be required or permitted to stand, climb, or walk upon piles of sand, sawdust, chips, gravel, fuel, seed, ~~grain~~ or similar granular or loose materials within bins, bunkers, hoppers, silos or other structures, unless a boatswain's chair or a Class III body harness with a line suspended from the hoist is used.

(e) No employee shall be required or permitted to work or climb on piled, granular or free flowing (loose) material, such as but not limited to sand, sawdust, chips, gravel, fuel; or seed ~~or grain~~ piled on a level deck or on the ground, unless provision is made for safe access to and egress from the piled material and protection from engulfment/entrapment hazards is provided as described in Section 3482(b). Whenever possible, platforms or walkways shall be provided and employees shall be instructed to remain upon such platforms or walkways while working over loose material.

NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code; and Section 18943(b), Health and Safety Code.

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PROPOSED STATE STANDARD,
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Amend section 5161 as follows:

§ 5161. Definitions.

Flat storage structure. A grain storage building or structure, ~~that is not a confined space as defined by GISO section 5158,~~ that will not empty completely by gravity, and that has an unrestricted ground level opening for entry, and must be entered to permit entry to reclaim residual grain using powered equipment or manual means. ~~Flat storage structures include flat bottom buildings where grain is stored on the floor or other structures where grain is stored in a pile in bulk on a flat bottom surface.~~

Note: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

Amend section 5178 as follows:

§ 5178. Grain Handling Facilities.

(a) Scope:

(1) This section ~~and section 5158~~ applies to all grain handling facilities, including grain elevators, ~~flat~~ outdoor flat storage and flat storage structures, feed mills, flour mills, rice mills, dust pelletizing plants, dry corn mills, soybean flaking operations, and the dry grinding operations of soycake.

(2) For the purposes of this section, the term "grain" includes raw and processed grain, grain products, and cottonseed.

(A) The term "grain" is limited to the kernel and does not include the stalk or other vegetative matter of the grain plant.

(3) This section contains requirements for the control of grain dust fires and explosions, and certain other safety hazards associated with grain handling facilities.

(4) ~~EXCEPTION:~~ This section does not apply to seed plants which handle and prepare seeds for planting ~~and on farm or feedlot facilities.~~

(b) Entry into grain storage structures, ~~flat storage structures and work on outdoor flat storage.~~

(1) ~~(a)~~ The employer shall either issue written authorization for entering bins, silos, ~~or~~ tanks or other confined spaces, or provide a qualified supervisor during the entire operation.

(A) The written authorization shall certify that the precautions contained in this section and in section 5158 have been implemented prior to employees entering confined spaces. The written authorization shall be maintained on file for inspection by the Division.

(B) ~~(2) (b)~~ Prior to the entry of a confined space, the atmosphere ~~within a bin, silo or tank~~ shall be tested. If the oxygen content is less than 19.5 percent (%), or ~~if~~ combustible gas or vapor is

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detected in excess of 10% of the lower explosive limit, or ~~if dangerous air contamination due to combustible particulate is detected in excess of 20 percent (%) of its lower explosive limit, or the toxicity of a substance a toxic agent~~ is detected in excess of its immediately dangerous to life or health concentration ~~the limits prescribed by section 5158(b)(2)C~~, the requirements prescribed by section 5158 shall apply.

Note: This section does not preclude the requirement to control harmful exposures, under the provisions of Article 107, to toxic substances at concentrations less than those immediately dangerous to life or health.

EXCEPTION for subsection (b)(1): Outdoor flat storage and flat storage structures in which there are no toxicity, flammability, oxygen-deficiency, other atmospheric hazards.

~~(2) (3)~~ Prior to entering, all mechanical, electrical, hydraulic, and pneumatic equipment which presents a danger to employees inside grain storage structures **or flat storage structures or working on outdoor flat storage** shall be deenergized and shall be disconnected, locked-out, tagged-out, blocked-out, or otherwise prevented from operating by other equally effective means or methods as prescribed by GISO section 3314.

~~(3) (4)~~ "Walking down grain" and similar practices where an employee walks on grain to make it flow within or out from a grain storage structure, **flat storage structures or outdoor flat storage**, or where an employee is on moving grain, are prohibited.

~~(4) (5) (h)~~ Employees shall not be permitted to be either ~~enter bins, silos, or tanks~~ underneath a bridging condition, or in any other location where an accumulation a buildup of grain or grain products on the sides or elsewhere could fall and engulf the employee-bury them.

~~(5) (6)~~ The employer shall equip the employee with a **Class III full** body harness with lifeline, or a boatswain's chair, and a second employee shall be present when an employee enters a grain storage structure from a level at or above the level of the stored grain or grain products, or when an employee walks or stands on or in stored grain of a depth which poses an engulfment hazard.

(A) The lifeline shall be so positioned, and of sufficient length, to prevent the employee from sinking further than waist-deep in the grain.

EXCEPTIONS for subsection (b)~~(5)(6)~~:

1. Where the employer can demonstrate that the protection required by this subsection is not feasible or creates a greater hazard, the employer shall provide an alternative means of protection which is demonstrated to prevent the employee from sinking further than waist-deep in the grain.

2. When the employee is standing or walking on a surface which the employer demonstrates is free from engulfment hazards, the lifeline or alternative means may be disconnected or removed.

~~(6) (7)~~ The employer shall provide necessary equipment and qualified personnel for rescue operations.

(c) Hot work.

(1) The employer shall issue a permit for all hot work, with the following exceptions:

(A) In welding shops authorized by the employer;

(B) In hot work areas authorized by the employer which are located outside of the grain handling structure.

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(2) The permit shall certify that the requirements contained in **section 4848 General Industry Safety Orders, Groups 10 and 11** have been implemented prior to beginning the hot work operations. The permit shall be kept on file until completion of the hot work operations.

(e) Housekeeping. The employer shall develop and implement a written housekeeping program that establishes the frequency and method(s) determined best to reduce accumulations of fugitive grain dust on ledges, floors, equipment, and other exposed surfaces.

(1) ~~(e)~~ The housekeeping program for grain elevators shall address fugitive grain dust accumulations at priority housekeeping areas.

(2) ~~(4)~~ Priority housekeeping areas shall include at least the following:

(A) Floor areas within 35 feet of inside bucket elevators;

(B) Floors of enclosed areas containing grinding equipment; and

(C) Floors of enclosed areas containing grain dryers located inside the facility.

(3) ~~(2)~~ The employer shall immediately remove any grain dust accumulations whenever they exceed 1/8 inch (.32cm) at priority housekeeping areas.

EXCEPTION: Grain and product spills shall not be considered fugitive grain dust accumulations. However, the housekeeping program shall address the procedures for removing such spills from the work area.

(4) The use of compressed air to blow dust from ledges, walls, and other areas shall only be permitted when all machinery that presents an ignition source in the area is shut-down, and all other known potential ignition sources in the area are removed or controlled.

Grate openings. Receiving-pit feed openings, such as truck or railcar receiving-pits, shall be covered by grates. The width of openings in the grates shall be a maximum of 2-1/2 inches (6.35 cm).

(f) Filter collectors.

(1) ~~(d)~~ Fabric dust filter collectors which are a part of a pneumatic dust collection system shall be equipped with ~~the~~ a monitoring device that will indicate a pressure drop across the surface of the filter.

(2) Filter collectors installed on or after July 5, 1990, [***the effective date of this standard***] shall be located:

(A) Outside the facility; or

(B) In an area inside the facility protected by an explosion suppression system; or

(C) In an area inside the facility that is separated from other areas of the facility by construction having at least a one hour fire-resistance rating, and which is adjacent to an exterior wall and vented to the outside. The vent and ductwork shall be designed to resist rupture due to deflagration.

Exception for (f)(2): The provisions of this section shall apply retroactively to existing non-compliant filter collectors installed on or after July 5, 1990, effective [*12 months after the effective date of this standard***].**

(g) Preventive maintenance.

(1) The employer shall implement preventive maintenance procedures consisting of:

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(A) Regularly scheduled inspections of at least the mechanical and safety control equipment associated with dryers, grain stream processing equipment, dust collection equipment including filter collectors, and bucket elevators;

(B) Lubrication and other appropriate maintenance in accordance with manufacturers' recommendations, or as determined necessary by prior operating records.

(2) The employer shall promptly correct dust collection systems which are malfunctioning or which are operating below designed efficiency. Additionally, the employer shall promptly correct, or remove from service, overheated bearings and slipping or misaligned belts associated with inside bucket elevators.

(3) The employer shall implement procedures in accordance with the provisions of GISO section 3314 for the use of tags and locks which will prevent the inadvertent application of energy or motion to equipment being repaired, serviced, or adjusted, which could result in employee injury. **Such locks and tags shall be removed in accordance with established procedures only by the employee installing them or, if unavailable, by his or her supervisor.**

(h) Grain stream processing equipment.

Grain stream processing equipment (such as hammer mills, grinders, and pulverizers) shall be equipped with an effective means of removing ferrous material from the incoming grain stream.

(i) Continuous-flow bulk grain dryers.

(1) ~~(e)~~ By April 1, 1991, all All direct-heat grain dryers shall be equipped with the following automatic controls that will:

(A) ~~(1)~~ sShut-off the fuel supply in case of power or flame failure or interruption of air movement through the exhaust fan; and

(B) ~~(2)~~ sStop the grain from being fed into the dryer if excessive temperature occurs in the exhaust of the drying section.

(2) ~~(f)~~ Direct-heat grain dryers installed after July 5, 1990 ~~the effective date of these regulations~~, shall be located in one of the following areas:

(A) ~~(1)~~ oOutside the grain elevator; or

(B) ~~(2)~~ iInside the grain elevator protected by a fire or explosion suppression system; or

(C) ~~(3)~~ iInside the grain elevator separated from other areas of the facility by construction having at least a one hour fire-resistance rating.

(j) ~~(g)~~ Inside bucket elevators (bucket elevators).

(5) Bucket elevators shall not be jogged to free a choked leg.

(6) All belts and lagging purchased after July 5, 1990, ~~the effective date of these regulations~~ shall be conductive. Such belts shall have a surface electrical resistance not to exceed 300 megohms.

(7) ~~By April 1, 1991, all~~ All bucket elevators shall be equipped with a means of access to the head pulley section to allow inspection of the head pulley, lagging, belt, and discharge throat of the elevator head. The boot section shall also be provided with a means of access for clean-out of the boot and for inspection of the boot, pulley, and belt.

(8) ~~By April 1, 1991, the employer shall~~ Bearings:

(A) ~~mount b~~ Bearings shall be mounted externally to the leg casing; or

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(B) ~~provide~~ Vibration monitoring, temperature monitoring or other means shall be provided to monitor the condition of bearings mounted inside or partially-inside the leg casing.

(5) ~~By April 1, 1991, the employer shall equip~~ Bucket elevators shall be equipped with a motion detection device which will shut-down the bucket elevator when the belt speed is reduced by 20% of the normal operating speed.

(6) ~~By April 1, 1991, the employer shall~~ Belt alignment:

(A) ~~equip~~ Bucket elevators shall be equipped with a belt alignment monitoring device which will initiate an alarm to employees when the belt is not tracking properly; or

(B) ~~provide a~~ means shall be provided to keep the belt tracking properly, such as a system that provides constant alignment adjustment of belts.

(7) Subsections ~~(g)~~(j)(5) and (j)(6) of this section do not apply to grain elevators having permanent storage capacity of less than one million bushels, provided that daily visual inspection is made of bucket movement and tracking of the belt.

(8) Subsections ~~(g)~~(j)(4), (j)(5), and (j)(6) do not apply to the following:

(A) ~~Bucket~~ elevators which are equipped with an operational fire and explosion suppression system capable of protecting at least the head and boot section of the bucket elevator; or

(B) ~~Bucket~~ elevators which are equipped with pneumatic or other dust control systems or methods that keep the dust concentration inside the bucket elevator at least 25% below the lower explosive limit at all times during operations.

~~(h) Employees shall not enter bins, silos, or tanks underneath a bridging condition, or where a buildup of grain products on the sides could fall and bury them.~~

~~(k) (i)~~ Record keeping.

A certification record shall be maintained of each inspection performed in accordance with sections 3221(e), ~~and~~ 3328(b), and 5178(g) containing the date of the inspection, the name of the person who performed the inspection and identification of the equipment inspected.

(l) Contractors.

(1) The employer shall inform contractors performing work at the grain handling facility of known potential fire, ~~and~~ explosion ~~and~~ engulfment hazards related to the contractor's work and work area. The employer shall also inform contractors of the applicable safety rules of the facility.

(2) The employer shall explain the applicable provisions of the emergency action plan to contractors.

(m) Emergency escape.

(1) The employer shall provide at least two means of emergency escape from galleries (bin decks).

(2) The employer shall provide at least one means of emergency escape in tunnels of existing grain elevators.

(3) Tunnels in grain elevators constructed ~~on or~~ after July 5, 1990 ~~[*the effective date of this standard*]~~ shall be provided with at least two means of emergency escape.

CALIFORNIA OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD

PROPOSED STATE STANDARD,
TITLE 8, CHAPTER 4

Exception for (m)(3): The provisions of this section shall apply retroactively to existing non-compliant tunnels in grain elevators constructed on or after July 5, 1990, effective [*12 months after the effective date of this standard*].

(n) Training. In addition to the requirements of section 3203, employees shall be trained prior to starting work in a grain handling facility and annually thereafter in at least the following:

(1) General safety precautions associated with the facility, including recognition and preventive measures for the hazards related to dust accumulations and common ignition sources such as smoking; and,

(2) Specific procedures and safety practices applicable to their job tasks. Employees assigned special tasks, such as but not limited to, cleaning procedures for grinding equipment, clearing procedures for choked legs, housekeeping procedures, hot work procedures, preventive maintenance procedures, lockout/tagout procedures, confined space entry, and handling of flammable or toxic substances, shall be provided training to perform these tasks safely.

(3) Training for employees who enter grain storage structures or work on grain storage piles shall include instruction in the recognition of engulfment and mechanical hazards and how to avoid them.

(o) Emergency action plan. The employer shall develop and implement an emergency action plan in accordance with section 3220 of these Orders.

NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

SUMMARY AND RESPONSE TO COMMENTS

SUMMARY AND RESPONSE TO WRITTEN AND ORAL COMMENTS

I. Written comments

Christopher Lee, Acting Regional Administrator, U.S. Department of Labor, OSHA Region IX, by letter dated April 11, 2006.

Comment No. 1:

GISO 5161, definition of “Flat Storage Structure.” The second sentence: “Flat storage structures include flat bottom buildings where grain is stored on the floor or other structures where grain is stored in a pile in bulk on a flat bottom surface” is not found in the federal standard and does not appear to require some non-ground level grain structures to meet the requirements and protections intended by the federal standard. A key to the federal definition is “ground level opening” and it is tied to being able to enter from a ground level to either manually or mechanically, remove the grain.

Response:

The Board accepts this comment and proposes to modify Section 5161, the definition of “flat storage structure,” to clarify that all flat storage structures, by definition, must have unrestricted ground level entry.

Comment No. 2:

Section 5178(b), Entry into grain storage structures. The proposed standard does not have separate sections for (1) entry into grain storage structures and (2) entry into flat storage structures, comparable to 29 CFR 1910.272(g) and (h) respectively. They opine that the separation of requirements for the two types of storage is necessary due to differences between them.

Response:

The Board agrees that there are some differences between the two types of storage; however, there are also many requirements common to both. Furthermore, the federal standard does not address outdoor flat storage at all, and this is a common storage method in California. Therefore, the Board proposes to clarify Section 5178(b) to indicate that requirements for all three types of storage are included within the subsection and to denote, by exception, requirements that may not apply to outdoor flat storage and flat storage structures.

Comment No. 3:

This comment refers to Section 5178(b)(1), written authorization. The written authorization does not include certifying that the required precautions for exposure to toxic agents above the ceiling level or mechanical, electrical, hydraulic and pneumatic equipment presenting a hazard to employees inside the structures have been evaluated and implemented prior to entry. Verbal communication from Region IX indicates that their concern is that the written documentation needs to certify that the precautions contained in 1910.272(g) have been implemented prior to employees entering bins, silos or tanks. [1910.272(g)(1)(i), (ii) and (iii)].

Response:

Section 5178(b)(1)(A) requires that the written authorization shall certify that the precautions contained in Section 5158 have been implemented prior to employees entering confined spaces. In response to Region IX concerns about precautions for exposure to mechanical, electrical, hydraulic, and pneumatic equipment which presents a danger to employees inside grain storage structures, the Board has added verbiage that the written authorization shall certify that the precautions contained in “this section” and in Section 5158 have been implemented prior to employees entering confined spaces.

- Section 5178(b)(1)(B) prescribes precautions for testing for oxygen content, combustible gases or vapors, combustible particulate, and toxic agents. A note has been added to clarify that this subsection does not preclude the requirement to control harmful exposures, under the provisions of Article 107, Dusts, Fumes, Mists, Vapors and Gases, to toxic substances at concentrations less than those immediately dangerous to life or health.
- Section 5178(b)(2) prescribes provisions for control of hazardous energy.

Comment No. 4:

The proposal does not contain the additional requirements for boatswains’ chairs as found in 1910.28(j).

Response:

This comment apparently refers to Section 5178(b)(6) [renumbered to (b)(5)], since it is the only place where it has been added to the standard. Boatswain’s chairs as specified elsewhere in Title 8 (e.g. Sections 1662 and 3286) and as used elsewhere [e.g. Section 3482(c)(1)], have not been previously challenged by Federal OSHA, and their specifications are not a part of this rulemaking, therefore, no modifications are proposed.

Comment No. 5:

The proposal does not contain information on what a “Class III body harness” is.

Response:

This comment apparently refers to Section 5178(b)(6) [renumbered to (b)(5)], since that is the only place where it is being added as part of this rulemaking proposal. Although the term “Class III body harness” is already used elsewhere in Title 8, and is commonly understood in the industry to be an ANSI/NFPA compliant full body harness, this proposal will be modified to replace “Class III” with “full body harness” for clarity and which is more effective than the counterpart federal standard 1910.272(g)(2) which requires a “body harness.”

Comment No. 6:

The ANSI/NFPA codes referenced in Section 4848 do not cover the requirements of 1910.272(f)(2) as found in 1910.252(a)(3) and (4).

Response:

This comment is apparently in regard to proposed modifications to section 5178(c)(2). The Federal OSHA comment refers to 1910.252(a)(3) Welding or cutting containers, and (a)(4) Welding in confined spaces. These specialized subjects are not covered in Section 4848, however, they are covered in the following Title 8 sections:

1910.252(a)(3)(i) Welding or cutting used containers, is covered by Title 8, Section 5166(b)(1).
1910.252(a)(3)(ii) Venting and purging is covered by Title 8, Section 5166(b)(2).

1910.252(a)(4)(i) Accidental contact, is covered by Title 8, Section 4851(c)

1910.252(a)(4)(ii) Torch welding is covered by Title 8, Section 4845(x) and (y).

The Board accepts the comment and proposes to amend the proposal to reference GISO Groups 10 and 11 which comprehensively cover hot work processes including welding and cutting with gas and electric equipment.

Comment No. 7:

Section 1910.272(l)(2)(A)-(C) specifies location requirements for filter collectors installed after March 30, 1988. California was obligated to adopt this standard as part of its agreement with Federal OSHA when it resumed administration of its State Plan on July 5, 1990. Therefore, Section 5178(f)(2)(A)-(C) must require filter collectors installed between July 5, 1990, and the effective date of the proposed standard to retroactively meet the requirements of Section 1910.272(l)(2)(A)-(C). Federal OSHA will allow a period not to exceed 1 year for phase-in.

Response:

The Board accepts this comment and proposes to modify Section 5178(f)(2) accordingly and add an exception for retroactivity.

Comment No. 8:

The referenced GISO 3314 does not include the requirement that locks and tags shall only be removed by the employee installing them, or, if unavailable, by his/her supervisor.

Response:

Although this provision is implicit in GISO 3314, the Board accepts this comment and proposes to clarify Section 5178(g)(3) by including verbiage verbatim of the federal standard.

Comment No. 9:

Section 1910.272(o)(2) requires at least two means of emergency escape in all grain elevator tunnels constructed after March 30, 1988. California was obligated to adopt this standard as part of its agreement with Federal OSHA when it resumed administration of its State Plan on July 5, 1990. Therefore, Section 5178(m)(3) must require two means of emergency escape in all grain elevators constructed after July 5, 1990 to retroactively meet the requirements of Section 1910.272(o)(2). Federal OSHA will allow a period not to exceed 1 year for phase-in.

Response:

The Board accepts this comment and proposes to modify Section 5178(m)(3) accordingly and add an exception for retroactivity.

The Board thanks Federal OSHA, Region IX, for their comments and participation in the rulemaking process.

David W. Smith, CSP, PE, Safety Engineer, Ensign Safety and Health Advisory, by letter dated April 19, 2006.

Comment No. 1:

Mr. Smith noted that the Notice of Public hearing contained a statement that "...the advisory committee determined that grains are not free flowing (loose) materials and do not present an engulfment hazard..." He stated that he disagrees with this statement. Each grain/seed has differing properties and potential hazards according to these properties. He noted that safflower seed, for example, is nearly as fluid as most liquids and has a very shallow natural angle of repose.

Response:

Board shares Mr. Smith's concern about the statement regarding the engulfment hazard of grains and wishes to clarify that the advisory committee minutes do not support the statement that "...grains are not free flowing (loose) materials and do not present an engulfment hazard..." The advisory committee minutes note that while the petitioner made this assertion, the committee neither accepted nor rejected that premise. The committee did, however, agree to separate engulfment protections for grains (GISO 5178) from those for other loose materials which are covered by GISO 3482. The Board accepts Mr. Smith's assessment; however, believes no changes to the proposal are necessary.

Comment No. 2:

The commenter asked for clarification whether GISO 5178 will only apply to materials defined as "grain" and whether seed and other bulk materials stored outdoors would remain regulated by Section 3482.

Response:

Section 5178 will only apply to grains. Subsection 5178(a)(1) indicates that this section applies to all grain handling facilities, including grain elevators, outdoor flat storage and flat storage structures, feed mills, flour mills, rice mills, dust pelletizing plants, dry corn mills, soybean flaking operations, and the dry grinding operations of soy cake.

Subsection (a)(2) notes that for the purposes of this section, the term "grain" includes raw and processed grain, grain products, and cottonseed. Cottonseed is included in (a)(2) because it is used as a feed grain for cattle. The advisory committee minutes noted that cottonseed in the context of Section 5178 has not been de-linted, treated with fungicides and otherwise prepared for planting. Thus it is a grain and not a seed. The Board also notes that Section 3482(c)(1) retains seed within the scope of that section, thus no changes are necessary.

Comment No. 3:

Mr. Smith believes that the proposal has created an oversight and that it has no engulfment hazard protection for entry into or work on loose stored grain in flat storage structures or on loose stored bulk grain outdoors. He recommended a separate section entitled, "Entry into flat storage structure or walking on loose stored bulk grain outdoors," be added to the proposal and that it repeat the proposed subsections 5178(b)(3) to (b)(7).

Response:

This comment is similar to Federal OSHA's comment no. 2 above. The Board agrees that there is some unintended ambiguity in the proposal, and therefore accepts the comment to the extent that it proposes modifications to Subsection (b) to clarify engulfment hazard protection for entry into or work on loose stored grain in flat storage structures or on loose stored bulk grain outdoors.

Comment No. 4:

The commenter asked for confirmation that the proposal, Section 5178(a)(4) deletes "on farm or feedlot facilities," as an exception.

Response:

"...on farm or feedlot facilities..." is proposed to be deleted from Section 5178(a)(4). Thus, Section 5178 will apply to grain handling at on-farm and feedlot facilities.

Comment No. 5:

The commenter asked for confirmation that the definition of "grain" is limited to the kernel and does not include the stalk or other vegetative matter of the grain plant, such as for silage. Would work on silage piles still be regulated by Section 3482?

Response:

The Board confirms that the definition of "grain" is limited to the kernel and does not include the stalk or other vegetative matter of the grain plant. Subsection 5178(a)(2)(A) has been added for clarity.

Comment No. 6:

The commenter notes that Section 5178(e) is titled "Grate openings;" however, the text goes on to apply to receiving pits. He recommends that the title be changed to "pit grate openings." He expressed concern that, unless more specific, this section could be interpreted to include grain conveyor grating openings at other than receiving pits which in his opinion present a substantial hazard.

Response:

This new section is verbatim of Federal standard 1910.272(k). The Board is of the opinion that the subsection is clear that it applies only to receiving-pit feed openings and that no further clarification is necessary.

Comment No. 7:

The commenter observes that Section 5178(l)(1) addresses the duty of the host employer to inform the contractor of fire and explosion hazards; however it fails to require the host employer to inform the contractor of the hazards of engulfment. He recommends such a provision be added.

Response:

The Board agrees with the commenter and proposes to modify Section 5178(l)(1) accordingly.

Comment No. 8:

The commenter notes that Section 5178(n)(3) requires training for employees who (1) enter grain storage structures (e.g. bins, silos, etc.) or (2) work on grain storage piles (outdoors?). He is of the opinion that adding the term “flat storage structures” would ensure such training is provided for entry into warehouses and storage sheds/barns where there may be a question whether it is outdoors or not.

Response:

The Board believes the present verbiage is broad enough to cover storage piles in any location, whether in an enclosed storage structure, a “pole barn,” or piled outdoors, and that no further modification or clarification is necessary.

The Board thanks Mr. Smith for his comments and participation in the rulemaking process.

II. Oral Comments

No oral comments were received at the April 20, 2006, Public Hearing in Sacramento, California.